

THERMAL MANAGEMENT SYSTEM AND METHOD FOR
VEHICLE ELECTROCHEMICAL ENGINE

ABSTRACT OF THE INVENTION

A thermal management system of an electrochemical engine comprises a radiator provided with a wicking mechanism, a coolant pump fluidly connected to the radiator, a water tank, and a water pump. The water tank is located in the void spaces around fuel storage tanks, and may be filled directly or with reclaimed water from a vapor by-product of the electrochemical engine. The water pump is operable to supply water from the water tank to the wicking mechanism during peak power and/or hot day conditions. Moisture in the vapor by-product may be condensed with the excess cooling capacity of the radiator under less severe cooling conditions. Under freezing conditions, exhaust or coolant from the electrochemical engine may be used to unfreeze water in the tank and wicking mechanism supply lines.